CLAIMS

1. A method for carrying out surface plasmon resonance measurement, in which method

a beam of electromagnetic radiation is produced by a source of electromagnetic radiation,

the beam of electromagnetic radiation is directed through a prism onto a material layer in an angle of incidence, which material layer at least partly covers a planar surface of the prism,

a resonance phenomenon is caused,

a beam of reflected electromagnetic radiation is produced and directed by the surface through the prism and further to a detector for detecting the level of intensity of the beam of reflected electromagnetic radiation,

and the change of intensity of the beam of reflected electromagnetic radiation, caused by the surface resonance phenomenon, is measured,

the beam of reflected electromagnetic radiation being reflected with a mirror to the detector.

2. A method as claimed in claim 1, wherein a planar mirror is used, and

the planar mirror being arranged in plane parallel relation to the planar surface.

3. A method as claimed in claim 1, wherein the source of electromagnetic radiation is a laser.

4. A method as claimed in the claim 1, wherein the material layer is metal film, preferably containing Au.

5. A method as claimed in claim 1, wherein the prism is a semicylindrical prism having a planar surface having a longitudinal midline, and

the beam of electromagnetic radiation is directed onto the longitudinal midline.

6. A method as claimed in claim 1, wherein the prism and the mirror are rotated together with respect to the source of electromagnetic radiation and the detector so that the angle of incidence varies to achieve a surface plasmon resonance phenomenon.

7. A method as claimed in claim 1, wherein the prism is a semicylindrical prism having a planar surface having a longitudinal midline,

the beam of electromagnetic radiation is directed onto the longitudi-

nal midline, and

the prism and the mirror are together rotated about the longitudinal midline of planar surface of the semi-cylindrical prism so that the angle of incidence varies to achieve a surface plasmon resonance phenomenon.

8. A method as claimed in claim 1, wherein the source of electromagnetic radiation and the detector are rotated together with respect to the prism and the mirror so that the angle of incidence varies to achieve a surface plasmon resonance phenomenon.

9. A method as claimed in claim 1, wherein the prism is a semi-cylindrical prism, having a planar surface and having a longitudinal midline,

the beam of electromagnetic radiation is directed onto the longitudinal midline, and

the source of electromagnetic radiation and the detector are together rotated about the longitudinal midline of the planar surface of the semi-cylindrical prism so that the angle of incidence varies to achieve a surface plasmon resonance phenomenon.

10. A method as claimed in claim 1, wherein a sensor for detecting the presence of analytes in a sample is arranged in functional contact with the material layer, which sensor comprises biomolecules capable of binding a specific analyte to the biomoleculs, and which sensor is capable of causing a change on the material layer to which it is in functional contact, indicative of an increase of analyte bound to the biomolecules,

a sample containing analytes is fed to the sensor,

causing analytes to bound to the biomolecules,

causing a change in the material layer, and

causing a change in the resonance phenomenon and the reflected electromagnetic radiation indicative of the presence of analytes in the sample fed to the sensor.

11. A device for carrying out surface plasmon resonance measurement, the device comprising

a source of electromagnetic radiation for producing and directing a beam of electromagnetic radiation through a prism onto a material layer in such a fashion that the electromagnetic radiation meets the material layer at an angle of incidence enabling a surface plasmon resonance phenomenon,

the material layer at least partly covering a planar surface of the prism, and

which planar surface is adapted to produce a beam of reflected electromagnetic radiation, which is reflected through the prism and further to a detector for detecting the level of intensity of the beam of reflected electromagnetic radiation,

the device further comprising a mirror for reflecting the beam of reflected electromagnetic radiation to the detector.

12. A device as claimed in claim 11, wherein the mirror is a planar mirror, and

the planar mirror and the planar surface of the prism are arranged in a plane parallel relationship.

13. A device as claimed in claim 11, wherein the source of electromagnetic radiation is a laser, and

the beam of electromagnetic radiation and the beam of reflected electromagnetic radiation are laser beams.

14. A device as claimed in claim 11, wherein the material layer is metal film, preferably containing Au.

15. A device as claimed in claim 11, wherein the prism is a semi-cylindrical prism.

16. A device as claimed in claim 11, wherein the device comprises a first rotating arrangement for rotating the source of electromagnetic radiation together with the detector so that the angle of incidence varies to achieve a surface plasmon resonance phenomenon.

17. A device as claimed in claim 16, wherein the source of electromagnetic radiation and the detector are mechanically fixed to each other.

18. A device as claimed in claim 16 or 17, wherein the prism is a semi-cylindrical prism having a planar surface having a longitudinal midline,

the source of electromagnetic radiation is arranged to direct the beam of electromagnetic radiation onto the midline of the planar surface, and

the first rotating arrangement is arranged to rotate the source of electromagnetic radiation together with the detector around the midline of the planar surface of the semi-cylindrical prism.

19. A device as claimed in claim 11, wherein the device comprises a second rotating arrangement for rotating the prism together with the mirror so that the angle of incidence varies to achieve a surface plasmon resonance phenomenon.

20. A device as claimed in claim 19, wherein the prism and the mir-

ror are mechanically fixed to each other.

21. A device as claimed in claim 19 or 20, wherein the prism is a semi-cylindrical prism having a planar surface having a longitudinal midline,

the source of electromagnetic radiation is arranged to direct the beam of electromagnetic radiation onto the midline of the planar surface, and

the second rotating arrangement is arranged to rotate the source of electromagnetic radiation together with the detector around the midline of the planar surface of the semi-cylindrical prism.

22. A device as claimed in claim 11, wherein by a sensor for detecting the presence of analytes in a sample is in functional contact with the material layer, which sensor comprises biomolecules capable of binding a specific analyte to the biomoleculs, and which sensor is capable of causing a change on the material layer to which it is in functional contact, indicative of an increase of analyte bound to the biomolecules.